

AMENDMENT AND RESPONSE TO OFFICE ACTION
U.S.S.N. 10/750,185

Remarks

Claims 1-35 and 40-51 are pending. Claim 24, 25, 45, 35 and 40-51 have been amended. Claims 1-23, 26-32 and 36-39 have been cancelled. By entry of this amendment, claims 24-25, 33-35 and 40-51 are pending. Support for these amendments is found in the specification as filed at least at paragraphs 35, 36, 159, and Tables 1A and 1B.

Rejections under 35 U.S.C. §112, second paragraph

Claims 24-25 and 33-51 are rejected under 35 U.S.C. §112, second paragraph as being indefinite for the recitation of the phrase “extension primer which binds to the first and second strand of the target sequence” as the Examiner asserts that it is unclear how a primer can bind to both strands of the target sequence. The claims have been amended for clarity to recite “an extension primer which is capable of binding to a target sequence adjacent to a SNP position located in a region less than about 500,000 nucleotides from nucleic acid residue 300 of SEQ ID NO:20614, wherein the extension primer is a substrate for polynucleotide synthesis across the SNP position.” The phrase that it is objected to has been removed without prejudice to further prosecution on the merits. The extension primer is now defined based on its location in relation to amino acid residue 300 of SEQ ID NO:20614. Applicants believe this amendment overcomes the Examiner’s rejection.

Claims 24-25 and 33-51 are also rejected under 35 U.S.C. §112, second paragraph as being indefinite as the Examiner alleges that it cannot be determined what the term “corresponds to” means. In the interest of promoting prosecution and without prejudice to further prosecution on the merits, the claims have been amended for clarity to remove this phrase.

Claims 24-25 and 33-51 are also rejected under 35 U.S.C. §112, second paragraph as being indefinite for recitation of a sequence “90% identical to”. Although Applicants believe this phrase is not indefinite, in the interest of promoting prosecution and without prejudice to further prosecution on the merits, the claims have been amended for clarity to remove this phrase.

Claims 24-25 and 33-51 are also rejected under 35 U.S.C. §112, second paragraph as being indefinite because the Examiner finds it unclear what combination is required in claim 24.

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To clarify the claims, these have been redrafted to identify a nucleic acid that is selected from either a first nucleic acid binding to a specified SNP or an extension primer binding adjacent to the SNP.

Claims 24-25 and 33-51 are also rejected under 35 U.S.C. §112, second paragraph as being indefinite because the Examiner alleges it cannot be determined what is encompassed by “an extension primer which binds to the first and second strand of the target sequence downstream from the primers of (a) or (b),...” As noted above, the claims have been amended for clarity to specify that the extension primer include a target sequence adjacent to a specified SNP. In the interest of promoting prosecution and without prejudice to further prosecution on the merits, the rejected language has been removed. The amendments clarify that the extension primer be designed to bind adjacent to the SNP, which is useful to sequence across the adjacent specified SNP.

Claims 24-25 and 33-51 are also rejected under 35 U.S.C. §112, second paragraph as being indefinite because the Examiner alleges that it cannot be determined what is meant by “wherein the first or second primer comprises a residue which is complementary to a specific sequence variant...” The claims have been amended for clarity to specify a nucleic acid that “comprises at least 20 contiguous nucleotides capable of binding to a SNP position associated with a bovine trait on bovine genomic DNA, wherein the SNP position is located in a region less than about 500,000 nucleotides from nucleic acid residue 300 of SEQ ID NO:20614.” This amendment clarifies that a nucleic acid of at least a certain length that binds to a specified SNP is claimed.

The Examiner has objected to claims 34-35 as confusing because it allegedly cannot be determined what is meant by a “nucleotide occurrence for the SNP position is associated with a value of at least 50th/99th percentile of the bovine population” for the trait. The claims have been amended for clarity to state that the particular allele (i.e. nucleotide occurrence) is associated with a bovine subject having a value for tenderness that is within a certain percentile of the total population for that trait. Applicants believe this amendment addresses the Examiner’s concerns.

The Examiner has also objected to claim 45 as confusing because of the recitation that the extension primer include sequences both upstream and downstream to the SNP. Amended

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claim 45 recites an extension primer that comprises a 3'-terminal residue at least one nucleotide position upstream from position 300 of sequence SEQ ID NO: 20614. In the interest of promoting prosecution and without prejudice to further prosecution on the merits, amended claim 24 no longer identifies the extension primer by its binding to other primers. Applicants believe this amendment overcomes the Examiner's rejection.

Rejections under 35 U.S.C. §112, first paragraph

The Examiner has rejected claims 24-25 and 33-51 under 35 U.S.C. §112 as failing to comply with the written description requirement. The Examiner contends that the pending claims encompass a genus so broad that the nucleic acids/primers do not even have to bind in the bovine genome.

The amended claims are limited to a primer of a particular length that is capable of binding to a specified SNP or an extension primer that binds to a position adjacent to the specified SNP. Language related to 90% identity has been removed in response to the Examiner's rejection. These amendments overcome the Examiner's rejection as the claims are now limited to a certain set of sequences in the bovine genome, and even specify binding in the bovine genome. Applicants believe these amendments overcome the Examiner's rejection as to breadth of the claims.

Claims 37-39 are rejected under 35 U.S.C. §112, first paragraph for failing to comply with the written description requirement for recitation of the "linkage disequilibrium" of related markers. Claims 37-39 have been cancelled and therefore this rejection is moot.

The Examiner has rejected claims 24-25 and 33-51 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Primarily this rejection is based on the Examiner's assertion that the pending claims are so broadly drawn as to encompass sequences that are at least 90% identical to any sequence, and a sequence which binds downstream therefore, which can be any sequence at any location, not necessarily on the bovine genome. Applicants have provided claim amendments, as discussed above, to clarify these claims and to limit the scope to primers that bind to, or bind adjacent to, a specified SNP sequence.

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The Examiner has advised the Applicant of the necessity of amending the claims to limit the trait to tenderness in order to advance prosecution. The claims have been amended as suggested by the Examiner.

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Conclusions

Applicants submit that the response herein provides a complete response to the Office Action dated December 12, 2007.

If the Examiner believes there are other issues that may be resolved by telephone interview, or that there are any informalities remaining in the application that may be corrected by Examiner's Amendment, a telephone call to the undersigned is respectfully solicited.

No additional fees are believed due, however the Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment of fees to Deposit Account number 11-0980.

Respectfully submitted,



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